APPENDICES

APPENDIX A

Constitutional Provisions Involved

Clause 8 of Section 8, Article I

Section 8. The Congress shall have Power. . . .

To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries. . . .

Amendment VII

In suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury, shall be otherwise re-examined in any Court of the United States, than according to the rules of the common law.

Statutes Involved

35 U.S.C. § 103

§ *103. Conditions for patentability; non-obvious subject matter*

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Rules Involved

Rule 38(a), Federal Rules of Civil Procedure

Rule 38.

Jury Trial of Right

(a) Right Preserved. The right of trial by jury as declared by the Seventh Amendment to the Constitution or as given by a statute of the United States shall be preserved to the parties inviolate.

APPENDIX B

UNITED STATES COURT OF APPEALS
FOR THE THIRD CIRCUIT

No. 17164

ALLEN INDUSTRIES, INC., A DELAWARE CORPORATION, AND COLONIAL RUBBER WORKS, INC., AN INDIANA CORPORATION

v.

NATIONAL SPONGE CUSHION CO., INC., A CALIFORNIA CORPORATION,

Appellant.

ON APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF NEW JERSEY

Argued October 10, 1968
Before McLAUGHLIN, STALEY and VAN DUSEN,
Circuit Judges.

OPINION OF THE COURT

(Filed November 27, 1968)

PER CURIAM.

This is an appeal from an order of the district court granting plaintiff's motion for judgment notwithstanding the verdict following a jury trial and verdict for defendant. Appellant contends that there were conflicts of fact necessary for the jury to resolve; and that there was no showing that reasonable men could not have reached the verdict returned by the jury and thus, in granting the motion, the district court usurped the function of the jury to find the facts.

We have carefully examined the record and can find no error. We will affirm the order of the district court on its thorough and well-reasoned opinion, Allen Industries, Inc. v. National Sponge Cushion Co., 292 F. Supp. 504 (D. N.J. 1967).

APPENDIX C

UNITED STATES COURT OF APPEALS
FOR THE THIRD CIRCUIT

No. 17,164

ALLEN INDUSTRIES, INC., a Delaware Corporation and COLONIAL RUBBER WORKS, INC., an Indiana Corporation

vs.

NATIONAL SPONGE CUSHION CO., INC., a California corporation,

Appellant

(D. C. Civil Action No. 106-65)

ON APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE —— DISTRICT OF NEW JERSEY

Present: McLAUGHLIN, STALEY and VAN DUSEN, *Circuit Judges.*

JUDGMENT

This cause came on to be heard on the record from the United States District Court for the —— District of New Jersey and was argued by counsel.

On consideration whereof, it is now here ordered and adjudged by this Court that the order of the said District Court, filed November 29, 1967, be, and the same is hereby affirmed, with costs.

ATTEST:
M. Elizabeth Ferguson
Chief Deputy Clerk

November 27, 1968

APPENDIX D

UNITED STATES DISTRICT COURT
District of New Jersey

ALLEN INDUSTRIES, INC., and COLONIAL RUBBER WORKS, INC., Plaintiffs, v. NATIONAL SPONGE CUSHION, INC., Defendant.	Civil No. 106-65 OPINION

LANE, *District Judge*:

This case was instituted by Allen Industries as a declaratory judgment action seeking to have the four claims of National Sponge's Patent No. 2,740,739 declared invalid. National Sponge answered, asserting the validity of its patent claims, and counter-claimed, alleging that certain of Allen's products infringed its patent. Defendant's answer contained a demand that the case be tried by a jury. Subsequent to defendant's answer, Colonial Rubber Works, a wholly-owned subsidiary of Allen and the manufacturer of the products claimed to infringe defendant's patent, was granted leave to intervene as a party plaintiff.

This action was brought pursuant to 28 U.S.C. § 2201 with jurisdiction being based on 28 U.S.C. § 1338(a). Venue is proper since one of defendant's manufacturing plants is located in New Jersey. 28 U.S.C. § 1391(c).

Defendant was most insistent upon exercising its right to a jury trial. Consequently, a jury was impaneled and the trial commenced on April 11, 1966. The trial continued until April 29, 1966, when the jury returned a verdict finding the four claims of defendant's Patent No. 2,740,739 valid and finding that four of plaintiffs' products infringed Claim One of said patent. By agreement of the parties, the damage issue was not submitted to the jury.

On May 9, 1966, plaintiffs filed in accordance with Rule 50 of the Federal Rules of Civil Procedure a motion for a judgment notwithstanding the verdict. The motion is properly before this court since plaintiffs' motion for a directed verdict made at the close of the presentation of evidence was denied. See, *e.g., Beebe* v. *Highland Tank & Mfr. Co.*, 373 F.2d 886, 888 (3d Cir. 1967).

The parties in this case are engaged in the production and distribution of carpet underlay. Carpet underlay, as its name connotes, is a product which is placed under carpeting to increase cushionability and prevent slippage.

There are various types of carpet underlay and they differ greatly in terms of such things as feel under foot, durability, and ease of handling. Carpet underlay is produced from a variety of materials including jute, cattle hair, foam rubber, and sponge rubber. It can be either flat on both sides, flat on one side with embossments on the other, or waffled with bulges on both sides. Some carpet underlay has no reinforcing fabric while others have fabric backing. The fabric backings vary in terms of the closeness of the weave, the type of material, and the method of adhering the fabric to the underlay.

Allen Industries has been in the carpet underlay business for well over thirty years. In the early 1930's the only carpet underlay marketed by Allen was made of fiber materials such as cattle hair and jute. These products were somewhat modified in the middle 1930's by coating them with a latex spray in order to give them a greater degree of uniformity and cleanliness. Products such as these are still being produced and marketed by Allen, see P-216 and P-217.

In or about 1937 the first flat sponge rubber carpet underlay was introduced on the market. Shortly thereafter Allen was contacted by the U. S. Rubber Company and was shown some samples of a sponge rubber cushion product similar to P-91 which was flat on one side and

had raised embossments on the other. This "waffled rubber sheet" sample had no fabric reinforcement on it. The individual primarily responsible for this product was Mr. Virgil H. Bodle who was employed at the time by U. S. Rubber. In 1938 Allen entered into an agreement with U. S. Rubber to purchase its entire output of waffled rubber sheets and to act as its marketing agent. Allen also marketed a U. S. Rubber product called Sentinel which was a flat non-skid pacer gripper material, see P-55, with a fabric reinforcement in the center similar to a present Allen product, P-206. These market arrangements were abbreviated in 1941 by the war conditions which made rubber for carpet use unavailable.

When rubber became available again after the war Allen started to manufacture its own rubberized type underlay under the name Rubber-Loc, P-215. The other major companies came out with flat sponge rubber products and the first waffled sponge rubber products were introduced. B. F. Goodrich introduced a waffled sponge without a fabric backing similar to P-21 in 1949 and then modified it by adding a paper backing in 1951. U. S. Rubber produced and sold a waffled sponge with a fabric backing, P-98, sometime around 1950 or 1951 (Tr. 146).

Defendant National Sponge first commercially produced a waffled sponge rubber product with a fabric backing, P-121, in the early part of 1952. This was shortly before Mr. Bodle, formerly of U. S. Rubber, joined National Sponge. National Sponge experimented with a waffled underlay through 1952, and in December filed its application for the patent in suit, No. 2,740,739. The patent claimed a product, P-35, similar to the waffled sponge it was already producing, P-121, except that the fabric was to be applied without an adhesive.

In 1958 Allen Industries began to manufacture a flat foam rubber cushion and subsequently expanded its line to include a waffled foam rubber product. See P-210 and P-211. In the early 1960's Allen was producing a full line of carpet underlay products except for a sponge rubber

series. Perhaps to fill this gap, Allen purchased the Colonial Rubber Works in Dyersburg, Tennessee, in 1962. At the time, Colonial was engaged primarily in the business of custom blending various kinds of sponge rubber. Shortly thereafter Mr. George R. Sprague, formerly of B. F. Goodrich, was hired, and in the spring of 1963 Colonial started to manufacture a line of waffled sponge rubber products. It is these products which are the accused products in defendant's counter-claim for infringement.

Application for the patent in suit was submitted on December 27, 1952, Serial No. 328,186, and the patent was issued on April 3, 1956. The named inventors were Messrs. Dixon R. Harwin, Alfred Stern, and Virgil H. Bodle; National Sponge Cushion Co. was named as assignee of the patent. The claims of Patent No. 2,740,739 are as follows:

1. A carpet underlay comprising a coarse-mesh fabric, and a sponge rubber facing on one side of said fabric and formed with bulges that are spaced from the fabric, said facing between the bulges, being in contact with the fabric and having a multiplicity of projections formed and forced by pressure from a blowing agent and extending into and through the interstices of the fabric.

2. A carpet underlay according to claim 1: the portions of said projections that extend through the interstices of the fabric being larger than said interstices to effect a key-locking engagement of the fabric and sponge rubber.

3. A carpet underlay comprising of coarse-mesh fabric, a sponge rubber facing on one side of said fabric and formed with bulges that are spaced from the fabric, said facing, between the bulges, being in contact with the fabric, a multiplicity of integral projections on the bulges and extending through the interstices of the fabric to bond the bulges of the facing and the fabric, the latter being generally flat.

4. In a carpet underlay according to claim 3: the projections being disposed along spaced parallel lines that are on a bias relative to the weave of the fabric.

Since a waffled type of sponge rubber with a fabric backing was sold in the United States more than one year prior to the date of defendant's patent application (Tr. 148, P-218, it is clear that the patent would not be valid merely as a claim for a waffled sponge rubber underlay with a mesh fabric backing. 35 U.S.C. § 102(b). However, the essence of the alleged invention is broader than the general components of the product claimed; it relates specifically to a method of bonding the woven fabric backing to a waffled sponge rubber.

The teaching of the patent is that bonding can be achieved without an adhesive by having the sponge rubber between the bulges expand through the openings in the weave of the fabric (interstices), such expansion being caused by blowing agents added to the uncured sponge rubber. Once the rubber is blown through the interstices of the fabric, the bond is caused by the outward push that the projections have on the fabric surrounding the openings (Claim 1), and by the key-locking engagements formed by the flattening out of some of the projections to form rivet-like heads larger than the interstices (Claim 2). Said projections are supposed to be formed on the facing between the bulges (Claims 1 and 2) and are also claimed to be on the bulges (Claim 3). Since the waffled bulges are on a bias relative to the weave of the fabric backing, the projections on the bulges (and presumably on the facing between the bulges) will also be on a bias relative to the weave of the fabric (Claim 4).

These claims can better be explained by reference to the Figures A to G. Figure A represents the apparatus for producing the product covered by the patent in suit. (This apparatus is claimed in Patent 2,703,909, issued on March 15, 1955, to National Sponge as assignee from Messrs.

Harwin, Stern, and Bodle.) Figures B to D show the top side of the product with the fabric backing (8) and the projections (29) through the interstices. Figure E is a cross section of the waffled sponge showing the fabric backing (8) joined by means of projections (29). The bulges away from the fabric (30) and under facing (31) between the bulges are also shown. Figure F, which is an enlarged portion of the cross section, shows that the projections (29) are flattened out and are mushroomed around the adjacent threads (33). Figure G shows a bottom view of the finished waffled sponge rubber sheet with its bulges (30) and depressions (31).

The first step in the manufacture of the product in suit is to mix a blend of sponge rubber and to form it into a thin, flat sheet. This sheet of sponge rubber (6) leaves the blender and is fed onto a continuously moving link chain mold (5). The open weave fabric (8) is guided atop the rubber sheet by means of roller (7) and is then pressed against it by means of roller (9). Beneath the chain mold is a canvas apron (11) and above the chain, rubber, and fabric is an upper canvas apron (10). This five-ply sandwich is fed into a steamheated oven formed by two steel platens or chambers (27) with a fixed space between them. When subjected to the desired temperature a simultaneous blowing and vulcanization of the special sponge rubber mixture will occur. The temperature at which this occurs depends on the amount of blowing agents and accelerators added to the sponge rubber. As the mixture is heated the rubber will begin to expand and will sag downward (30) into the open channels (19) of the mold. The rubber sheet supported on the mold (31), however, cannot sag downward. Instead it will expand upward and be forced by the blowing agents against and through the mesh fabric, thereby forming projections (29). Some of the projections through the fabric will encounter the upper apron (10) and will be flattened out and mushroom around adjacent threads (33).

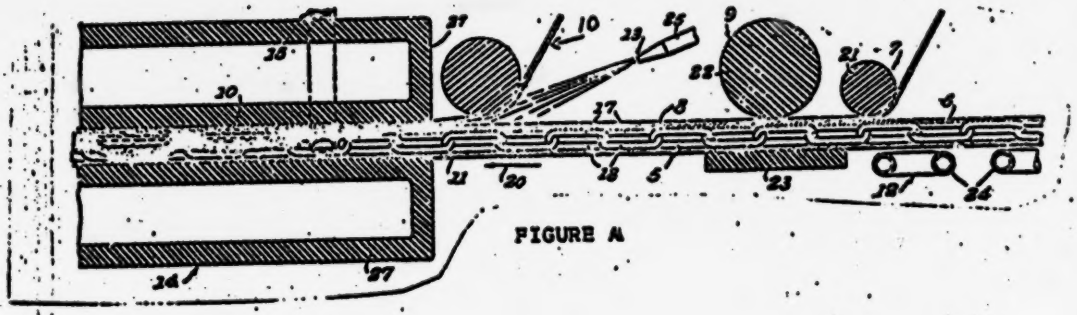


FIGURE A

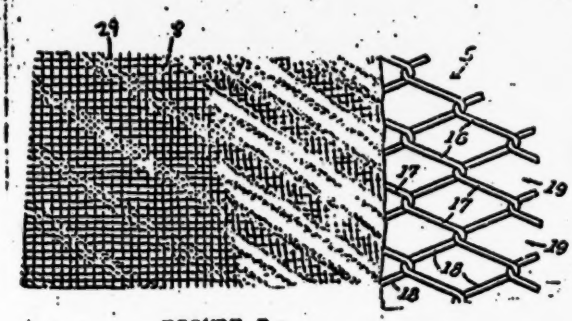


FIGURE B

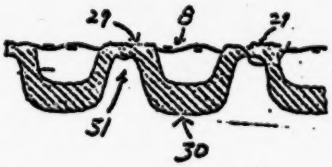


FIGURE E

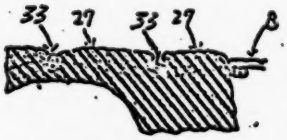


FIGURE F

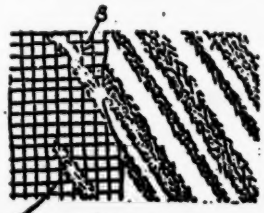


FIGURE C



FIGURE D

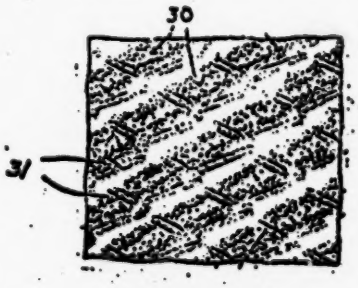


FIGURE G

On this motion for a judgment notwithstanding the verdict, plaintiffs contend, *inter alia*, that the claims of Patent No. 2,740,739 are invalid. In support of this contention plaintiffs assert the following theories: (a) the invention claimed was anticipated by the prior art, 35 U.S.C. § 102(a); (b) the invention claimed had already been made by others in this country and had not been abandoned, 35 U.S.C. § 102(g); (c) the invention claimed does not meet the requirement of non-obviousness, 35 U.S.C. § 103; (d) the invention claimed was merely an assembly of old elements, *Lincoln Engineering Co.* v. *Stewart Warner Corp.*, 303 U.S. 545 (1938); (e) the invention claimed would inevitably be produced as a result of the process of Claim 8 of Patent No. 2,703,909 and therefore constitutes double patenting, *Miller* v. *Eagle Mfg. Co.*, 151 U.S. 186 (1894); (f) the invention claimed is not sufficiently described in the specifications, 35 U.S.C. § 112.

In dealing with plaintiffs' motion this court is well aware of the delicate balance that must be maintained in the allocation of functions between the judge and the jury. The jury has determined that defendant's patent is valid, and we are now asked to enter a judgment declaring the patent invalid notwithstanding the jury verdict.

The ultimate question of patent validity is one of law. *Graham* v. *John Deere Co.*, 383 U.S. 1, 17 (1966); *A. & P. Tea Co.* v. *Supermarket Corp.*, 340 U.S. 147, 155 (1950). Over the years standards of invention have been established which must be met before a patent may be properly issued. Based on its understanding of the law, as charged, the jury in the instant case found that the facts established that defendant's patent was properly issued. However, it is our belief that the jury's finding of patent validity is inconsistent with the established standards of invention. It is in such cases that it is appropriate to grant a judgment notwithstanding the verdict. *Bentley* v. *Sunset House Dist. Corp.*, 359 F.2d 140 (9th Cir. 1966); *Zilk* v. *Deaton Fountain Serv.*, 257 F.Supp. 458 (N.D. Cal. 1966); see *Packwood* v. *Briggs & Stratton Corp.*, 195 F.2d

971 (3rd Cir.), *cert. denied,* 344 U.S. 844 (1952). Thus we feel compelled to exercise the responsibility delegated to us by Rule 50 of the Federal Rules of Civil Procedure and to hold as a matter of law that Patent No. 2,740,739 is invalid for failure to meet the test of non-obviousness.

The statutory requirement of non-obviousness is set forth in 35 U.S.C. § 103, which provides:

> *"Conditions for patentability; non-obvious subject matter*
>
> "A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made."

The statutory requirement was given extensive treatment in the recent case of *Graham* v. *John Deere Co.*, 383 U.S. 1 (1966), where it was interpreted in light of the constitutional command that the patent system must "promote the Progress of . . . useful Arts." The Court concluded that section 103 was merely a codification of a condition of patentability which had judicially evolved over the years. Although the Court clearly held that the statutory formulation did not change the strictness of the standards of obviousness, it did conclude that the inquiry should be "beamed with greater intensity." 383 U.S. at 19.

The test of non-obviousness involves a three-fold inquiry: (1) the scope and contents of the prior art at the time of the claimed invention must be ascertained; (2) the differences between the subject matter of the claimed invention and the prior art must be defined; and (3) it must be determined whether the differences defined would

have been obvious at the time of the claimed invention to a person having ordinary skill in the art to which the subject matter pertains.

1. THE PRIOR ART

B. F. Goodrich Prior Art

B. F. Goodrich's early experience in combining sponge rubber and fabric was in the production of the insole material for shoes. In the middle 1930's Goodrich started to produce a variety of carpet underlay products and still manufactures such products. Samples of some of the products manufactured in the 1940's were introduced into evidence as P-5, P-6, P-7, P-8, P-9, and P-12. For the most part these flat sponge rubber products with fabric backing were produced by passing a layer of uncured sponge rubber with a fabric on top of it through heated stationary platens as shown in P-1, a diagram of the sheeting machine. When the uncured rubber sheet was heated the blowing agents in the rubber caused it to expand and push the fabric against the top platen. The blowing continued in this confined space and as a result of the blowing and the pressure, the sponge rubber passed into or through the interstices of the fabric. It thus formed a bond with the fabric without the use of adhesives. (Tr. 278-79.) The types of backings used varied in closeness of weave and also in composition of fabric, but blow-through was experienced with cottonette, burlap, and duck.

During the period 1949-1952 various experiments concerning adjusting the composition of the sponge rubber were conducted. See P-123, P-124, P-125, P-127, P-128, P-129. In these experiments the amount and type of accelerators and the amount of sulphur were changed. Goodrich had known since the early 1930's that it could vary its product by varying its composition. (Tr. 371.)

Mr. Lester Pannone, who was employed by B. F. Goodrich for 43 years and did much work with sponge

rubber, testified that he first saw a waffled sponge rubber product in 1947 (the U. S. Rubber product, P-98), and shortly thereafter was able to reproduce it in his laboratory. Various experimentations on waffled sponge were continued throughout 1948 and it was first commercially sold by B. F. Goodrich in 1949.

This commercial waffled sponge product, P-21, had no fabric or other backing. Complaints were received because it was found that the product would stretch and tear when a carpet was dragged across it. To strengthen the product and decrease the friction, a paper backing was put on the product in 1950 or 1951. This product was not entirely satisfactory either, because there was a rustle as people would walk on it.

In 1951 experimentation with a fabric backing was conducted and it is claimed that a successful product was produced, as reflected in document P-28. Pannone testified that adherence was achieved in the product by the rubber being blown through the interstices of the fabric and that he observed a mushrooming of the projections (Tr. 345-46). According to Pannone, the problem was one of limiting the blow-through rather than achieving it (Tr. 456).

The laboratory worksheet accompanying the experimentation with adhering a fabric backing to the waffled sheet, P-28, states that, "Waffle with cottonette 1 or 2 sides can be made—extra cost not justified at present." In fact, such a product was not commercially marketed by B. F. Goodrich until 1954 and was not really perfected until 1955 or 1956 when latex was added to the backing and some of the blow-through was eliminated, see P-30 and P-31.

U. S. Rubber Prior Art

U. S. Rubber first combined fabric and sponge rubber in the early 1930's for use as a shoe insole material, both with and without the use of adhesives. In the late 1930's

they produced a carpet underlay which was composed of an embossed rubber sheet with a cemented fabric backing. See P-91 and P-62.

After the war U. S. Rubber expanded its carpet underlay line and produced several flat sponge rubber products with burlap backings, P-93 and P-94. These products and others, *e.g.*, P-59 P-60, were made in a double platen press, see P-102, and adherence was achieved without adhesives by having the sponge rubber blow and force the fabric against the top platen. Blow-through was observed and the testimony is that it was usual for the pressure of the blowing agents to force sponge rubber through the backing except for backings which had no openings (Tr. 655). Adherence was also attributed to the natural tackiness of the raw sponge rubber.

The testimony is that the end-result product could be varied by changing the chemical composition of the sponge rubber. This, in turn, would affect the amount of blowing of the rubber (Tr. 651). The importance of changing the composition of the sponge rubber was known at U. S. Rubber prior to World War II (Tr. 629).

U. S. Rubber first experimented with a waffled sponge in 1945 and 1946 and started to commercially produce waffled sponge with a fabric backing in 1948. This product, P-50 or P-98, was made in two steps first by curing, blowing, and shaping the sponge rubber and then by laying a latex (cement) coated fabric on top of the cured rubber and placing the two on a drying drum. (Tr. 584.)

The testimony is that prior to 1950, U. S. Rubber also produced a waffled sponge rubber with fabric backing without the use of adhesives. This was done in three different ways: (1) by calendering the rubber and sponge together; (2) by roll-pressing the fabric onto the sponge; or (3) by laying the fabric on the rubber. The product was then put into the platen press where it was blown and cured. The relation between fabric and rubber in

the finished product was that a rubber had been pushed into and in some cases through the interstices of the fabric. (Tr. 590.) U. S. Rubber did not commercially produce a waffled sponge with a mesh fabric backing secured without use of adhesive or calendering prior to 1954 (Tr. 590), although some of the evidence indicates that they were actively seeking such a product, D-EEE.

National Sponge Prior Art

At the time that Mr. Bodle joined National Sponge in the spring of 1952, National Sponge was already commercially producing and selling a waffled sponge rubber carpet underlay with a mesh fabric backing, P-121. Bonding of the fabric to the waffled sponge was achieved in that product by use of an adhesive.

Mr. Harwin, the president of National Sponge and a listed co-inventor of the patent in suit, described how the early product, P-121, was manufactured. The machine used to produce that product was similar to that used in the patent in suit and its main difference was that it had a means of applying an adhesive to the fabric.

Harwin's testimony is that whereas P-121 had the fabric adhered by use of adhesives, adherence was achieved in the product made in accordance with the patent in suit, P-35, by chemical and mechanical blowing of the sponge rubber into and through the interstices of the fabric. (Tr. 953-54). Mr. Harwin did testify, however, that projections were observed in isolated areas of the early product, P-121. (Tr. 919.)

Prior Art Patents Not Cited by the Patent Office

(a) Jean Pennel and Joseph Flipo, "Sponge Rubber Coated Fabric and Method of Manufacturing the Same," No. 2,163,289, issued June 20, 1939. This patent teaches simultaneous blowing (called swelling) and vulcanization by coordinating the time of the vulcanization process with the blowing process through use of accelerators. It also

teaches the adhesion of a fabric and sponge rubber without an adhesive by calendering the fabric into the raw sponge mixture (i.e., rolling the two through a device similar to the wringers of a washing machine), and then heating the combination and allowing it to blow and vulcanize. The method is free blow since the combination is not confined in a mold. The patent also teaches the manufacture of a product in a continuous process.

(b) Thomas Roth and Theodore Hinchcliffe, "Method of Making Floor Coverings, Table Coverings, and the Like," No. 2,217,137, issued October 8, 1940. This patent teaches a method of uniting sponge rubber to a fabric, including mesh fabric, without the use of an intermediate adhesive material. This product is made in a restricted mold by placing an uncured sponge rubber mixture on top of a fabric. The closed mold is subjected to heat and "the internal pressure of the expanding rubber forces the rubber into the pores of the fabric . . . thereby causing an inseparable union of the fabric and the rubber sheet." This product is not made continuously and is not free blown. Dr. Colburn stated that projections would be inevitable in this product.

(c) Edward Seward and William Seward, "Apparatus and Method for Manufacturing Rugs and the Like," No. 2,240,581, issued May 6, 1941. This patent teaches that sponge rubber and woven fabric can be united without an adhesive by vulcanization in an enclosed mold subject to heat. As the rubber is heated it expands and forces the fabric against the upper member of the mold. Dr. Colburn stated that projections through the interstices of the fabric would be formed. This is a non-continuous process.

(d) George Blair and Virgil Bodle, "Carpet Underlay or the Like and Method of Making Same," No. 2,339,142, issued January 11, 1944. This patent teaches that sponge rubber can be calendered into a woven fabric with the rubber being pressed into the interstices of the fabric on one or both sides. The combination is then passed through an oven where it is heated which causes it to blow and vul-

canize resulting in free-blown bulge formations or protuberances through the interstices.

(e) George Blair and Virgil Bodle, "Method of Making Laminated Cushion Material," No. 2,480,316, issued August 30, 1949. Although the patent teaches a method of combining an open-weave fabric and an inexpensive non-cellular stock, it also contemplates the use of sponge rubber. This process involves feeding a sheet of rubber into a circular forming apparatus which heats and molds the rubber into an embossed sheet with opensided hollow ribs. A continuous sheet may be formed and the fabric can either be vulcanized directly to the rubber in the same process or can be adhered separately in a second step by use of an adhesive. The fabric in either case is applied only to the top of the raised embossments (i.e., it straddles the valleys between the adjoining holiow ribs). Although the patent says nothing about blowing or projections, Dr. Colburn stated that the formation of projections through the interstices of the fabric is implicit in the process. These projections in turn would be flattened out by contact with the belt surrounding the circular molding apparatus.



Prior Art Patents Cited by the Patent Office

(a) William Binns, "Method of Making Rubber Cushion Material," No. 2,271,058, issued January 27, 1942. This patent teaches a means of combining latex foam rubber with a fabric by pouring the latex onto a surface which has curved projections and which has fabric conforming thereto. This combination is heated and vulcanizes and coagulates, forming a product with air pockets. The fabric conforming to the air pockets is adhered without a cement and this product can be produced in a continuous process.

(b) George Blair and Virgil Bodle, "Method of Making Sponge Rubber Material," No. 2,325,903, issued August 3, 1943. This patent teaches a method of producing a free-blow, solid, sponge rubber sheet with a raised waf-

fle design. This is done by pre-forming the uncured sponge by use of a calender roller which imparts a design onto the raw rubber. The raw rubber with raised embossments is then fed into a heated atmosphere where it is blown and vulcanized. Since this product is not confined in a mold, it can be made in a continuous process. The patent also states that a fabric backing can be applied to the flat side of the fabric by use of an adhesive.

(c) John Reese, "Skin Graft Receiving Member," No. 2,583,341, issued January 22, 1952. This patent teaches that rubber rivets extending through the interstices of a fabric can be used as a method of mechanically uniting the fabric to the sponge rubber sheet. A portion of the rubber is forced into the interstices of the fabric by calendering them together, and, thus, the rivets are integral with the rubber sheets. The calendered sheet is then vulcanized.

(d) Sterling Alderfer, "Fabric Coated Sponge Rubber and Method of Making Same," No. 2,648,619, issued August 11, 1953. This patent teaches the adhesion of rubber to a fabric without the use of an adhesive by causing the rubber to be embedded in the interstices of the fabric. The specifications talk in terms of a foamed latex rubber but it is also stated that sponge rubber can be used.

2. THE ADVANCEMENT MADE BY THE PATENT IN SUIT

The advancement made by the patent in suit over the prior art is a method of *attaching a coarse mesh fabric backing to a waffled sponge rubber sheet without the use of an adhesive.* (Tr. 233, 959, 1317.) According to the testimony of the three men who claim to be co-inventors of No. 2,740,739—Messrs. Bodle, Harwin, and Stern—the product was primarily a result of their joint efforts.

Mr. Harwin testified and offered documentary proof which showed that at the time Mr. Bodle joined the staff at National Sponge in April of 1952, National Sponge was already commercially producing P-121, a waffled sponge

rubber carpet underlay with a coarse mesh fabric backing. (Tr. 949, 1471, 1485.)

Mr. Bodle testified that the product covered by the patent in suit, P-35, was developed during the summer of 1952 as a result of an effort to improve the National Sponge waffle underlay P-121. After stating that P-121 was not an acceptable product, Mr. Bodle explained what was wrong with it and how the improvements thereon resulted in the new product claimed by the patent in suit:

> A. [Mr. Bodle] . . . The adhesion of the fabric that they were using was not good enough.
>
> Q. [Mr. Harness] You mean the adhesion of the fabric to the sponge rubber?
>
> A. Yes. The sponge was not even across. It had humps in it and unevenness. I might add that you have to make a product that when you cut it to put it around under your carpet, you can't have different thicknesses, and the product was uneven. The adhesion was bad. It just wasn't a successful and commercial product.
>
> Q. What changes did you make in that material or the method of manufacturing to come up with the product referred to in the patent in suit?
>
> A. Well, jointly three of us, Mr. Harwin and Stern and myself took this problem and started to work on it earnestly and in a way that we would make a product that was acceptable. Because of my previous experience, I knew that a rubber carpet underlay was a wanted product in this country.
>
> Q. What did you do specifically, Mr. Bodle?
>
> A. Well, between the three of us, the first trial that was made after I came with them, the fabric or scrim was being cemented at the far end of this 16-foot press and then the fabric was brought back to the starting end or this righthand side.
>
> Q. You mean brought back here before it got to the oven over on this side?
>
> A. Brought back to the righthand side of the oven and combined with the sponge or laid on the sponge

and as I said before, the product was uneven, bad adhesion, hard spots, and it was just not an acceptable product so—

Q. Yes, but what—excuse me. Go ahead.

A. So we went to work on the adjustments of the machine.

Q. Let's take the adjustments of the machine. Specifically tell me what adjustments did you make in the old machine to make the products shown in the '739 patent in suit?

A. We changed the method of raising and lowering the oven.

Q. You mean raising and lowering this top platen?

A. The top and the bottom, that is the separation of those two heated chambers.

Q. What did you change them from, what to what?

A. As I recall, they had jacks, similar to an automobile jack, and we put screw adjustments, bolts, so to speak, so they could be worked with a wrench. We changed the heating so that we could vary the heat.

Q. By varying the heat you mean the heat along the length of this oven press?

A. Yes.

Q. How did you make that change? What did you do to be able to vary the heat where you couldn't before?

A. Put in heating, we lengthened the press and put in some extensions on the front and the back in order to get to vary the heat because the 16-foot press was not made so that you could change the heat. It was all one cavity, so we put steam chamber in the front and the back, as I recall now so that we could change the heat, and then we started, and we eliminated the cement from the fabric, and we changed the design or the kind of fabric that they were using or that they had when I came with them.

Q. What did you change, from what kind of fabric to what kind to make the successful product?

A. Well, we were using, they were using a, I call it sleazy, limp fabric that was, I don't see any—

Q. Something like cheesecloth, limp like cheesecloth?

A. Yes, in a measure, yes, and we changed it to a square woven fabric. . . .

Q. . . . On this new fabric, the square woven fabric which you said you changed to to get the successful product referred to in your patent in suit, was that fabric, when you got it from the fabric manufacturer, coated with a latex rubber?

A. I was told after I got acquainted with the manufacturers of this fabric, which happened to be the Fulton Bag Company in Atlanta, Georgia, I was told, or while we were working perfecting a fabric, that they were using some of this liquid rubber latex in the sizing, in the sizing in fabric. Almost all fabric, your dresses and suits and mine, has a stiffening agent, has something in it to give it a hand.

Q. Starch is a typical sizing, isn't it?

A. Starch.

Q. Yes.

A. And they were using some latex in their starch to make their starch work better.

Q. Well, they were using—the answer to my question is there was, to the best of your knowledge, liquid latex, rubber latex applied to the fabric by the fabric manufacturer, is that correct?

A. That's right.

Q. All right. So now you have said the changes you made were you eliminated the use of jacks on the oven, these big heavy cast iron oven jacks and put in a screw arrangement so you could adjust the spacing between. That was one change. I believe you said another change. I believe you said another change that you made was you arranged the oven so you could vary the steam pressure in the different parts of the oven?

A. That is right.

Q. Then you changed the fabric from a limp fabric to a stiffer square woven fabric, and you eliminated the putting of the fabric through a cement bath?

A. That is right. . . .

Q. What was it, Mr. Bodle, that enabled you with this new product, which you say you developed in 1952, to eliminate the need for the cement on the fabric which had been in the earlier National Sponge product?

A. My experience, other than the mechanical changes that the three of us worked out, my previous experience in those 30-some years before was to use certain amounts of sulfur and accelerator, that is the things that makes rubber cure, vulcanize, and I conceived the idea of using a greater amount to get vulcanization and sponging in a better method and to get the sponge to blow up and through and into, and sometimes through the interstices of the fabric. And so I used a greater amount of accelerator and sulfur than any experience that I had or knew anything about.

Q. So it was the increase in the amount of sulfur and accelerator in the new compound which enabled you to adhere the fabric to the rubber without passing the fabric through a cement, is that correct?

A. It is correct, together with other techniques of compounding that I can't recall right now.

Q. You don't recall the other techniques?

A. Softening the rubber probably had something to do with it, the processing of it.

Q. What do you mean by the processing of it?

A. Natural rubber that comes out of the tree is a hard, horny mass. I mean it comes out of the tree a liquid, about like maple syrup. It is just like the syrup comes out of a maple tree. And it contains about 40 to 45% water and that water is evaporated off, where the rubber is raised, and most of the rubber is raised in the Far East, near the equator, where the fighting is now going on. And when we get the rubber in bales, I am talking about natural rubber

from the rubber tree, when we get the rubber it is a horny, hard mass and it requires processing, it requires squeezing, it requires what we call masticating to get it into a dough and to a shape so that you can make this noodle that I was talking about.

And so we changed the compound of the rubber, softened it, together with putting ingredients in it to make it sponge up and through the fabric.

As a result of the above-described changes in the machinery, fabric, and rubber compound, National Sponge was able to produce a product without the use of an adhesive to bond the waffled sponge rubber to the fabric backing. Instead, bonding was achieved by having the sponge rubber blow into and in some cases through the interstices of the fabric. The portion of the rubber extending through the fabric was flattened out forming a rivet or mushroom head and effecting a key-locking engagement. Thus, National Sponge was able to produce its carpet underlay P-35 in a one-step process. In that process, not only is the waffle design imparted to the sponge rubber, but, in addition, the chemical reaction resulting in the simultaneous blowing and vulcanization of the sponge rubber is utilized to effect a bonding of the fabric backing to the waffled sponge rubber.

The process has enabled National Sponge to reduce its production costs and the resulting product has met with much commercial success.

3. OBVIOUSNESS OF THE ADVANCEMENT OVER THE PRIOR ART

The prior art reveals that at the time of the invention in suit there was nothing new about a carpet underlay product composed of a waffled sponge rubber sheet with an attached woven mesh fabric. U. S. Rubber was producing such a product, P-98, as was National Sponge, P-121. However, in those products attachment of the fabric to the sponge rubber was achieved by means of an adhesive.

At the time of the invention in issue, it was common practice to adhere fabric backings to *flat* sponge rubber sheets without the use of adhesive. In some of these flat products adherence was accomplished by calendering the rubber and the fabric together and thus embedding the fabric into the uncured rubber. See Pennel, No. 2,163,289, P-6, P-9, P-93. In our view, the nature of bonding achieved by forcing the fabric into the sponge rubber is not greatly different from having the rubber force itself into the fabric. Although there was some blow-through in these products, it is difficult to separate the effects of the blow-through from the effects of the calendering because blow-through was restricted by the top platen of the machine. However, where such products are allowed to free blow, the combined effect of calendering and the blowing can be seen. See Blair No. 2,339,142.

Adherence between sponge rubber and fabric has also been achieved without adhesives in flat products without calendering. This is done by having the rubber blow under pressure into the interstices of the fabric, while the fabric and the rubber are restricted in a confined mold. See Seward, No. 2,240,581; Roth No. 2,217,137. Other methods have also been used to force the rubber into the interstices of the fabric and thus accomplish bonding without calendering and without the use of an adhesive. See Alderfer, No. 2,648,619.

At the time of the invention in suit not only was it known that bonding between a fabric and a flat rubber could be achieved without adhesives by having the rubber extend into the interstices of the fabric but it was also known that bonding could be achieved by having the rubber extend into *and through* the interstices—forming rivet-like projections very similar to the key-locking principle claimed by the patent in suit. See Reese, No. 2,583,341.

In addition to these flat sponge rubber products, it was also known in the prior art that a woven fabric could be vulcanized to a corrugated rubber sheet. See Blair, No. 2,480,316. Although no mention is made in the patent of

projections coming through the interstices of the fabric, plaintiffs' expert, Dr. Colburn, testified that the sponge rubber would blow through the interstices of the fabric and be flattened out by the outside belt (Tr. 1147-48) and that projection would be implicit (Tr. 1311). In addition, the waffled product referred to in B. F. Goodrich laboratory worksheet, P-28, is claimed to be adhered to a fabric backing by rubber being blown through the interstices of the fabric.

If the expert testimony relating to Blair, No. 2,480,316, and the recollection of the Goodrich people concerning the product are correct, it can be strongly argued that the patent in suit had been completely anticipated. However, we do not rely on this evidence as establishing anticipation. Nor do we, in our view of the case, find it necessary to rely on this evidence as part of the prior art against which the advancement made by the patent in suit must be evaluated.

A review of the relevant prior art leads us to the conclusion that the means employed by the patent in suit to adhere the fabric backing to the *waffled* sponge is essentially the same as had been used to adhere fabric to *flat* sponge. The question thus presented is whether the difference between the problems encountered when using a waffled sponge and those presented in the use of flat sponge is so great that the invention in issue would not have been obvious to one having ordinary skill in the art.

There is testimony to the effect that a waffled sponge rubber product could not be calendered to a fabric because this would interfere with the formation of the bulges (Tr. 257). However, much of the prior art did not require calendering.

Mr. Pannone testified on cross examination that the problems of adhering fabric to waffled sponge are different from those involved in adhering it to flat sponge (Tr. 384). However, on redirect Pannone testified that the method of applying fabric to sponge rubber, flat or waffled, is the same. (Tr. 457-60.)

Dr. Colburn, plaintiffs' expert, testified that the only difference between obtaining a bond using waffled sponge rubber and an open weave fabric as compared with flat sponge rubber, is that the area of contact between the fabric and the waffled sponge would be less than in the case of flat sponge. But, in the area where there is contact, he stated that the fabric and the rubber would behave the same way for both the flat and the waffled sponge rubber. (Tr. 1174, 1178-79.) Dr. Colburn based his conclusion on an experiment which he conducted in which he produced flat and waffled sponge rubber simultaneously in the same operation. P-269 and P-270. (Tr. 1174-78.)

The evidence convinces us that the problems of adhering a fabric to a waffled sponge are not significantly different from those which had been experienced in the use of flat sponge. Thus, it is our conclusion that the advancement made by the patent in suit over the prior art would have been obvious to a person of ordinary skill in the art. Consequently we hold that the four claims of Patent No. 2,740,739 are invalid as a matter of law.

While it is true that defendant has presented evidence on such secondary considerations as commercial success, unsolved need, failure of others, and licensing agreements which are relevant indicia of non-obviousness, see *Graham* v. *John Deere Co., supra* at 17-18, these factors cannot establish invention where obviousness is otherwise clear. *Walker* v. *General Motors Corp.*, 362 F.2d 56, 60 (9th Cir. 1966) and cases cited therein.

The above disposition makes it unnecessary for us to pass on the other issues raised on this motion. A form of order is to be submitted.

Dated: July 11, 1967

APPENDIX E

UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

National Sponge Cushion Co., Inc., a corporation, *Appellant*, vs. Rubber Corporation of California, *Appellee*.	No. 16,562 Feb. 8, 1961

Appeal from the United States District Court for the Southern District of California, Central Division.

Before STEPHENS, POPE and JERTBERG, *Circuit Judges*.

POPE, *Circuit Judge*.

The appellant, owner of Harwin Patent No. 2,740,739, for Carpet Underlay, brought this action against the appellee charging infringement of its patent and seeking damages therefor. After issued joined, the case was tried to a jury which returned a verdict for the plaintiff. Thereafter the court granted defendant's motion for judgment notwithstanding the verdict under Rule 50(b) of Federal Rules of Civil Procedure, and entered judgment accordingly for the defendant.

The action of the court was based upon the findings of the trial judge that the claimed patent lacked novelty because of anticipation of its claims by developments in the prior art. By this appeal the plaintiff challenges the propriety of the court's rejection of the contrary finding of the jury and its own finding of anticipation.

Plaintiff's patent relates to a type of product which is used to underlay, anchor and cushion floor carpets. In this general area of product, such carpet underlays are useful in cushioning the carpet and making it more resilient. For this reason the main constituent of the under-

lay is made of rubber, usually foam rubber, because of its cushioning effect. The rubber serves to anchor the carpet and prevent slipping along the floor.

Such devices are usually completed by attaching to the upper surface of the rubber pad which lies next to the floor a fabric material sealed or bonded in some manner to the rubber pad. Prior to plaintiff's product, this was done by using a cement to join the fabric to the rubber. This fabric serves two purposes: It furnishes a fairly flat surface on which the carpet may lie and it holds firmly in place the rubber pad to which it is affixed preventing it from spreading by lengthening or widening as a result of use, as it might otherwise do. Some of these carpet underlays are made of foam rubber formed in corrugations so as to facilitate air reaching all parts of the pad and thus aiding in retention of its resiliency. When the rubber pad is formed in that manner the anti-spreading action of the attached fabric is particularly useful as a corrugated rubber pad is more likely to spread apart than would be the case with a solid rubber one.

Plaintiff's claimed invention, as the stated claims disclose, relates solely to the manner in which the fabric portion of the underlay is attached and fastened to the rubber which lies beneath it. The patented structure discloses that the coarse fabric, with interstices approximately one-sixteenth of an inch square, has been bonded to the rubber through the fact that the rubber has been caused to penetrate the interstices of the fabric so that after passing through such openings the penetrated rubber has spread out and formed protrusions with knob-like heads larger than the interstices. The result is a key-locked connection between the fabrics and the sponge rubber which has been accomplished without the use of any adhesive.

In further explanation of the structure, the specifications state that this key-locking mode of attachment of the fabric to the rubber pad with its waffle-like corrugations is accomplished by heating and blowing the sheet

of sponge rubber into a corrugated mold whereby the rubber is held in intimate contact with the fabric so that in blowing or expanding, the rubber is forced to enter the interstices of the fabric and swell around adjacent threads of the fabric and form the headed knob-like projections that are somewhat larger in size than the areas of the fabric interstices. The claims as stated appear in the margin.[1]

In this case, as in many other cases where a claimed invention is attacked on the ground that the claims of patented devices were anticipated by earlier patents, the decision as to validity may turn upon a question of fact. *Leishman v. General Motors Corp.*, 9 cir., 191 F. 2d 522, 529. (See other cases cited in *Bergman* v. *Aluminum Lock Shingle Corp. of America,* 251 F. 2d 801, 809-813, concurring opinion.) Our first inquiry necessarily is: what was the prior art as disclosed by the prior patents which

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[1] "1. A carpet underlay comprising a coarse-mesh fabric, and a sponge rubber facing on one side of said fabric and formed with bulges that are spaced from the fabric, said facing between the bulges, being in contact with the fabric and having a multiplicity of projections formed and forced by pressure from a blowing agent and extending into and through the interstices of the fabric.

"2. A carpet underlay according to claim 1: the portions of said projections that extend through the interstices of the fabric being larger than said interstices to effect a key-locking engagement of the fabric and the sponge rubber.

"3. A carpet underlay comprising a coarse-mesh fabric, a sponge rubber facing on one side of said fabric and formed with bulges that are spaced from the fabric, said facing, between the bulges, being in contact with the fabric, a multiplicity of integral projections on the bulges and extending through the interstices of the fabric to bond the bulges of the facing and the fabric, the latter being generally flat.

"4. In a carpet underlay according to claim 3: the projections being disposed along space parallel lines that are on a bias relative to the weave of the fabric."

were part of the record in this case? The question is whether insofar as this factor entered into the verdict of the jury, the evidence of anticipation was so overwhelming and compelling that it can be said that as a matter of law there was a total failure of proof of the essential novelty to sustain the plaintiff's case so that the district court was justified in granting judgment notwithstanding the verdict.

The Judge's conclusion, as disclosed by his memorandum of decision, was based upon his views of two prior patents, Blair and Bodle, No. 2,480,316, and Coyte, No. 562,-281. This he stated in the memorandum as follows: "The Patent in suit does not disclose invention in the light of the teaching of Blair and Bodle United States Letters Patent No. 2,480,316, particularly in view of Coyte, United States Letters Patent No. 562,281." So far as those two patents are concerned, we have no difficulty in arriving at a conclusion that neither one of them was of such character as to establish anticipation. As we have said, the novelty claimed for the patent here in suit relates to the manner of key-locking or bonding the woven fabric to the rubber pad; the Blair and Bodle patent was a process patent stated to be for a method of making laminated cushion material. That patent described a product made of a sheet or lamination of rubber which might be shaped or formed into corrugations or hollow ribs which had applied to it a backing sheet of material such as burlap to reinforce the rubber material. However, the method of attachment of the backing sheet is there described as follows: "The backing sheet 12 touches and is secured to the peaks or tops of the embossments or corrugations at one side of the rubber sheet as by a layer or coating 13 of cement, rubber or the like, or by being vulcanized directly thereto."[2]

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[2] Appellee suggests that since this patent contemplated the use of blowable cellular or sponge rubber, that the blowable sponge rubber would project into and through the open mesh fabric thereafter widening and forming the

Another prior patent relied on by the trial court as an anticipation has even less resemblance to the claimed patentable feature of the patent here in suit. Claims 1 and 2 of the plaintiff's patent described a project which has rubber "formed and forced by pressure from a blowing agent and extending *into and through* the interstices of the fabric." (Emphasis added.) The portions of the projections that extend through the interstices of the fabric are described as "being larger than said interstices to effect a key-locking engagement of the fabric and sponge rubber." Coyte contains nothing which remotely resembles this.

The Coyte process is for the purpose of making gutta-percha cloth. The process involves the passing of a sheet of gutta-percha with a cloth or fabric laid upon it between heated rolls, firmly pressed together, so that portions of the gutta-percha sheet will "project into the meshes of the fabric" and "cause the gutta-percha to be held to the fabric."

It would appear to be obvious that this process could not possibly cause the gutta-percha to extend "through" the interstices of the fabric or to accomplish an attachment by a key-locking process.

If all that this record contained with respect to anticipation of the patent in suit were the two patents we have

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[2] (Continued)
key-lock referred to in plaintiff's claims. There is no evidence to support such a contention, and nothing in the Blair-Bodle patent to suggest that any such thing was contemplated. On the contrary, the patent suggests quite the opposite. It states that the heated rubber "is soft enough so that it will gravitate into the channels of the shaping drum." It suggests that a suction pull may be added to that of gravity. The quoted description refers to a pull by gravity or suction precisely opposite to that which is described in plaintiff's patent. This gravitating into the channels of the shaping drum is a process to form the waffle-like ridges or projections, the push or pull being away from and not toward the fabric.

just discussed, namely, Blair and Bodle, and Coyte, it would be hard to say that there was sufficient evidence even to permit a submission of that question to a jury. With that alone in the record it could well be said that no valid challenge of the novelty of plaintiff's device had been presented. But there is in the record another patent not alluded to by the court in its findings or opinion which in our view does present a question of fact with respect to anticipation, although a question which we think it was proper for the jury to decide.

That patent is Alderfer No. 2,648,619. It discloses an undertaking by the inventor to produce a very different product having very different qualities than that contemplated by the patent in suit. That patent was for what was called a "fabric coated sponge rubber and method of making same." The indicated objectives related solely to the procuring of desirable surfaces both on the rubber and on the fabric. The patent undertook to disclose a novel product where the "outer surface of the foam rubber is smooth, planished and porous having uniformly distributed microscopic pores." For the fabric side of the product the object was to see to it that "the fabric be a knitted textile fabric, rather than woven, to increase the softness and enhance the appearance of the fabric side of the product." As illustrations of the use of the product the inventor stated "automobile seat coverings foam rubber backed with finely knitted fabric presents a softer texture and a more pleasing appearance than can be obtained with a woven textile fabric. Also, foam rubber backed with knitted textile fabric such as tricot is desired in making certain products such as brassieres, because of the soft sheen and delicate appearance of the fabric."

For his means of accomplishing these surface objectives the inventor introduced between the layer of the sponge rubber and the knitted fabric "an intermediate layer of square mesh fabric which was substantially non-elastic." To put this product together he spread freshly foamed latex upon a smooth surface which traveled in

one direction under a doctor roll or doctor bar which was adjusted to give the latex the desired depth or thickness. The two fabrics, the woven and the knitted, were then carried under the doctor bar so that the open mesh woven fabric was in direct contact with the top surface of the reduced layer of foam latex and the knitted fabric was introduced on top of the woven fabric. The specification stated that by this process "the foamed latex will pass or 'strike' through the open meshes (of the woven fabric) into contact with the inner surface of the knitted fabric layer which also absorbs some of the water in the latex to cause the latex to firmly embed itself in the interstices of the knitted fabric and become securely anchored to the fabric layer."

Plainly enough this discloses a product and a process where foam latex passed through a woven fabric and embedded itself in the interstices of the knitted fabric. It appears to us that the passing of heated sponge rubber through a woven fabric does not in itself anticipate a key locking device such as that of the patent in suit. In Alderfer the passing of the latex through the interstices is described, but it simply passes through and into interstices of knit fabric which is shown in the Alderfer drawings as being of substantial thickness as in all knit fabrics. There is no suggestion whatever of a bonding by key-lock as in the patent before us.[3]

In describing his product the inventor of plaintiff's device set forth how the key locking knobs were formed. When the uncured sponge rubber sheet comes from the rubber mill it is placed on a traveling mold and the net fabric is placed thereover. A web is placed over the fabric

[3] Nothing in Alderfer suggests that the inventor intended or appreciated any key-locking development from the passage of the latex through the woven fabric. "It is well settled that prior accidental production of the same thing, where character and function are not recognized, does not anticipate." *McKee* v. *Graton & Knight Co.*, 4 Cir., 87 F. 2d 262, 264, and cases there cited. Walker on Patents, Deller's Edition, §57.

and another beneath the mold. This five-ply assembly is then moved slowly between heated platens, fixedly spaced without pressure. The heat causes the sponge rubber sheet to expand and since the rubber is held in intimate contact with the fabric, the expansion forces the rubber to enter the interstices and "swell around adjacent threads of said fabric to form headed knob-like projections that are somewhat larger in size than the areas of the fabric interstices."

We are of the opinion that on the evidence here the jury were justified in finding as a fact that the product thus produced had a novelty not anticipated by anything shown in Alderfer. Its verdict should not have been set aside.

One thing that confirms us in this view is that the portion of the patent office file received in evidence discloses that Alderfer was cited in connection with the application for plaintiff's patent and that this problem of anticipation by Alderfer was considered and a resolution of the matter arrived at only after considerable controversy and an amendment of the claims originally presented.[4]

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[4] An original claim "6" was rejected, it being stated by the Examiner "In Alderfer the fabric 16 is considered to have the interstices through which the rubber extends and fastens itself as claimed." Claim 6 to which this referred read as follows: "In a carpet underlay comprising a coarse-mesh fabric and a sponge rubber facing thereon, a multiplicity of headed projections integral with the facing and extending from the facing through the interstices of the fabric with the heads thereof on the side of the fabric opposite to the facing." This claim was then amended to read as in Claim 3 of the patent, (footnote 1, supra).

It will be noted that in the amended claim the product is described not merely as one involving projections through the fabric, but with one having "projections on the bulges" and extending through the interstices "to bond the bulges of the facing and the fabric". So amended the claim No. 3 was allowed.

As noted in *S. H. Kress & Co.* v. *Aghnides,* 4 cir., 246 F. 2d 718, the usual presumption of validity of a patent (*Mumm* v. *Decker & Sons,* 301 U.S. 168, *Patterson-Ballagh Corp.* v. *Moss,* 9 cir., 201 F. 2d 403, 406), may be strengthened by the history of the patent in the patent office, particularly when it has been granted only after considerable controversy.

This brings us to the question whether the new improvement disclosed in the patent in suit measures up to the established standards for invention. This is a question of law, *Bergman* v. *Aluminum Lock Shingle Corp. of America, supra,* which requires a discussion of whether the device here shown required more ingenuity than the work of a mechanic skilled in the art. *Cuno Corp.* v. *Automatic Devices Corp.,* 314 U.S. 84, 90; *Leishman* v. *General Motors Corp.,* 9 cir., 191 F. 2d 522, 530; 35 U.S.C. §103.

The record here shows that leading up to the development of the product here in question was a long period of study, effort and experiment in an attempt to produce a practical means of attaching fabric to sponge rubber without the use of cement, which was the previously accepted method of attachment. The cementing process added approximately 10% to the cost of such a product. The device had commercial success; beginning with gross sales of $550,000 in 1951 they increased in three years to $2,370,000. All of these things, though not controlling, are indicia of actual invention and properly considered in determining that question. It is of no significance that "viewed after the event, the means . . . adopted seem simple and such as should have been obvious to those who worked in the field, but this is not enough to negative invention." *Goodyear Co.* v. *Ray-O-Vac. Co.,* 321 U.S. 275, 279. "Now that it has succeeded, it may seem very plain to any one that he could have done it as well. This is often the case with inventions of the greatest merit." *Carnegie Steel Co.* v. *Cambria Iron Co.,* 185 U.S. 403, 446. See *Patterson-Ballach Corp.* v. *Moss, supra.*

It is inferable from the facts in this case, including the rapid success which the new product found in the market, that this development for the first time, of a key-lock bond system for attaching the rubber to the fabric, was not only highly useful and a significant improvement over former products which utilized cement for attachment, but that it measured up to the established standards required for invention.

The trial court, without dealing in any specific manner with the question of the development of a key-locking engagement between the fabric and sponge rubber so as to bond the same, complained that plaintiff's evidence too much emphasized the method and apparatus used in the construction of the project. It is true that the specifications include a description of the manner and process of making and using the invention; but the precise structure of the patent is also described with clarity and the drawings referred to in the specifications, particularly Figures 2 and 3, adequately disclose the nature of the claims. The addition to the specifications of a description of the manner in which the carpet underlay described may be made, merely adds to the other description but in no manner invalidates the patent.[5] Furthermore, the claims adequately and sufficiently covered and described the improvement regarded as the invention.[6]

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[5] *Trussell Mfg. Co.* v. *Wilson-Jones Co.*, 2d cir., 50 F. 2d 1027, 1029: "But, if the article is new, it may be patented, and the claim will not be invalidated merely because it describes the article with some reference to the method of producing it." See 35 U.S.C. § 112.

[6] In *Winslow Engineering Co.* v. *Smith*, 223 F. 2d 438, this court, following *Graver Tank & Mfg. Co.* v. *Linde Air Products Co.*, 336 U.S. 271, although it found invention, held a patent invalid for insufficiency of the statements in the claims and that the deficiency could not be supplied by reference to the specifications. A similar point has not been raised in this case; but it is plain that the claims here are stated adequately to meet the requirements in the *Graver Tank* case, *supra*. Apparently in *Bergman* v. *Aluminum Lock*, *supra*, this court overlooked the rule of the *Graver* case and its own decision in the *Winslow* case.

We hold that the patent was valid.

With respect to the question of infringement, little need be said. A mere examination of the exhibits disclosing the patented article produced pursuant to plaintiff's patent and the accused device adequately demonstrates the claimed infringement. In setting aside the verdict the court below did not purport to find any fault with the jury's finding of infringement. It would be impossible to do so.

The judgment is reversed and the cause is remanded for further proceedings not inconsistent with this opinion.

(Endorsed) Opinion Filed Feb. 8, 1961.

Frank H. Schmid, Clerk.

APPENDIX F

Excerpts from Instructions to Jury

1-1776* * * *

1777 The Court: Ladies and gentlemen, as you well know, this is a lawsuit between the plaintiffs, Allen Industries, Inc. and Colonial Rubber Works, Inc., a wholly-owned subsidiary of Allen, and the defendant-counterclaimant, National Sponge Cushion Co., Inc.

* * *

1778-1786 * * *

1787 * * * The plaintiffs, Allen and Colonial, seek a declaration or finding by you that the patent in suit is an invalid patent, and they cite the following reasons:

* * *

Again, that the subject matter of the patent claims would have been obvious to artisans in the carpet underlay industry at the time the patented product was
1788 developed, and that the patented product did not meet the legal requirements to be a patentable invention.

* * *

1789-1793 * * *

1794 * * * Allen and Colonial, plaintiffs, contend that the claimed carpet underlay would have been obvious to a person skilled in the underlay art and who had all the background information available at the time that Messrs. Hamwin, Stern and Bodle made the underlay.

The law provides that a valid patent may not be obtained, even though the invention is not previously known in its identical form, if the only differences between the invention and what was previously known are such that the invention would have been obvious to a person having ordinary skill in the art at that time This rule prevents

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*Numbers refer to pages of trial transcript.

people from claiming patents on ideas or changes which do not really rise to the dignity of invention.

The law only allows a patent to be granted on improvements or innovations that are not minor and that require more ingenuity and skill than the ordinary person working in that field would be expected to have.

At the outset, it must be pointed out that this ordinary man skilled in the art is a man who is assumed to know all the background material which was available at
1795 that time. The fact that the inventors may not actually have known about some of the exhibits you have seen here is immaterial as far your judging the obviousness of the invention is concerned. You must try to place yourselves in the role of a person skilled in the carpet underlay art in 1952, and decide whether or not it would have been obvious for such a person, who knew of all this background material, to create what the inventors claim is their invention.

If you find that it would have been obvious to such a person, then the patent would have to be held invalid.

In determining whether or not the patent in suit would have been obvious to a person having ordinary skill in the art of making sponge rubber carpet underlay in the year 1952, you should consider the following:

1. The scope and content of the prior art.

2. The difference between the prior art and the claims at issue.

3. The level of ordinary skill in the pertinent art involved in the year 1952 and
against this background the obviousness or non-
1796 obviousness of the subject matter is to be determined by you.

The fact that the invention may seem simple when looking at it after it was worked out, or that it should have been obvious to those who worked in this field, is not enough to show that the invention is not patentable. On the contrary, the invention must not be appraised with

the wisdom of hindsight; nor can it be judged in the abstract; rather, the safest test of the contribution made by the invention and the merit of the invention is its actual effect in the art to which it belongs and its acceptance by the public.

If you believe that the scales are evenly balanced as to whether the carpet underlay of the patent in suit was new and useful, and are evenly balanced as to whether it was obvious to one skilled in the art, at the time the invention was made, then you should find in favor of the patent in suit on these points.

* * *

1797-1821 * * *

1822 * * * The Court: You may retire to reach your verdict in this case. I think you will find very shortly, hopefully, that you will have some lunch in the deliberation room. Do you want to retire?

(The jury left the courtroom at 2 P.M.)

1823 (The following occurred at 5:45 P.M.)

The Court: Here is a billet-doux I received: What is the Judge's charge with relation to the application of prior art to the patent in suit?

* * *

1824-1835 * * *

1836 * * * (The jury entered the courtroom at 6 p.m.)

The Court: Ladies and gentlemen, I have this note from you. The first question is what is the Judge's charge in relation to the application of prior art to the patent in suit. I am going to answer that by reading to you again, giving you again, that which I have given you on prior art, and I will try to go slowly.

* * *

1837 * * *

1838 * * * In determining whether or not the patent in suit would have been obvious to a person having ordinary skill in the art of making sponge rubber carpet underlay in the year 1952, you should consider the following:

1. The scope and content of the prior art.

2. Difference between the prior art and the claims at issue and

3. The level of ordinary skill in the pertinent art involved in the year 1952.

Against this background the obviousness or non-obviousness of the subject matter is to be determined.

Continuing on the prior art charge. Allen contends that the claimed carpet underlay would have been obvious to a person skilled in the underlay art and who had all 1839 the background information available at the time Messrs. Harwin, Stern and Bodle made the underlay.

The law provides that a valid patent may not be obtained, even though the invention is not previously known in its identical form, if the only differences between the invention and what was previously known are such that the invention would have been obvious to a person having ordinary skill in the art at that time. This rule prevents people from claiming patents on ideas or changes which do not really rise to the dignity of invention. The law only allows a patent to be granted on improvements or innovations that are not minor and that require more ingenuity and skill than the ordinary person working in that field would be expected to have.

At the outset, it must be pointed out that this ordinary man skilled in the art is a man who is assumed to know all the background material which was available at that time. The fact that the inventors may not actually have known about some of the exhibits you have seen is immaterial as far as your judging the obviousness of the

invention is concerned. You must try to place your-
1840 selves in the role of a person skilled in the carpet underlay art in 1952, and decide whether or not it would have been obvious for such a person, who knew of all this background material, to create what the inventors claim is their invention. If you find that it would have been obvious to such a person, then the patent must be held invalid.

I continue. The fact that the invention may seem simple when looking at it after it was worked out, or that it should have been obvious to those who worked in this field, is not enough to show that the invention is not patentable. On the contrary, the invention must not be appraised with the wisdom of hindsight; nor can it be judged in the abstract. Rather, the safest test of the contribution made by the invention, and the merit of the patent, is its actual effect in the art to which it belongs and its acceptance by the public.

If you believe that the scales are evenly balanced as to whether the carpet underlay of the patent in suit was new and useful, and are evenly balanced as to whether it was obvious to one skilled in the art, at the time the invention was made, then you should find in favor
1841 of the patent in suit on these points.

* * *